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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/510,567
Filing Date: October 08, 2004
Appellant(s): MIYAZAWA, HIROHISA

Stephen W. Palan
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 14, 2008 appealing from the Office action mailed October 18, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

There are no related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,477,593	Khosrowpour et al.	11-2002
6,085,137	Aruga et al.	7-2000

5,346,402 Yasuho et al. 9-1994

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Khosrowpour et al. (U.S. Patent 6,477,593)

As to claim 1, Khosrowpour et al. discloses a circuit board device (100) as shown in figures 1-2 comprising:

a base board (110) having a plurality of low-frequency electronic components (see figure 1); and

a multilayer module board (120), which is a low-end module board mounted at one surface and connected to the base board and having a plurality of high-frequency electronic components (see figure 1) including at least a CPU and a memory, wherein

the multilayer module board is smaller in size than the base board (see figure 1), the plurality of high-frequency electronic components are wired to one another through a wiring pattern at an inner layer.

As to claim 5, Khosrowpour et al. discloses the multilayer module board (120) comprising a plurality of high-frequency electronic components including a CPU and a

memory mounted at, at least, a surface (top surface) thereof, wherein: the plurality of high-frequency electronic components are connected with one another through a wiring patterns formed at an inner layer thereof (the wiring patterns do not show, but it is inherently that include the wiring patterns in inner layer of the module board 120 for receive or transmit signal data between chip and the CPU).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al. in view of Aruga et al. (U.S. Patent 6,085,137).

As to claim 3, Khosrowpour et al. discloses all of the limitation, except for the device being used in a navigation system.

Aruga et al. teaches a vehicle control device (1) as shown in figure 1 comprising a navigation system (10) comprising at least a power circuit, a gyro and a GPS circuit are mounted at the base board.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a teaching of Aruga et al. employed in the device of Khosrowpour et al. in order to provide information and detecting road for the vehicle.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al. in view of Yasuho et al. (U.S. Patent 5,346,402).

Regarding claim 6, Khosrowpour et al. discloses all of the limitations of the claimed invention, except for connector terminals provided as separate members each soldered onto one of four peripheral edges thereof.

Yasuho et al. shows an insulating substrate (7) having connector terminals (4) provided as separate members each soldered onto one of four peripheral edges, and the substrate (7) connected to a printed wiring board (22), see figure 22.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have terminals formed on four peripheral edges of the substrate as taught by Yasuho et al. employed in the device of Khosrowpour in order to provide a high density electrical connection between board to board.

Regarding claims 7-10, Khosrowpour et al. discloses all of the limitations of the claimed invention, except for connector terminals provided as separate members each soldered onto one of four peripheral edges thereof; the four connector terminals each include; a narrow, elongated base portion constituted of resin; a plurality of pins fixed to the base portion; aligning pins projecting at both ends of the base portion to be used when soldering the connector terminal onto a rear surface of the board; and inclined surfaces for position control formed at both ends of the base portion to be used when soldering the connector terminal; a pair of positioning holes at which the aligning pins are loosely fitted are formed at each of four corners of the board; and positions of the connector terminals are controlled when soldering the connector terminals as the

inclined surfaces for position control at adjacent connector terminals come into contact with each other while the positioning pins are loosely fitted at the positioning holes.

Yasuho et al. shows an insulating substrate (7) having connector terminals (4) provided as separate members each soldered onto one of four peripheral edges, and the substrate (7) connected to a printed wiring board (22), see figure 22; the four connector terminals (14) each include; a narrow, elongated base portion constituted of resin; a plurality of pins fixed to the base portion; aligning pins projecting at both ends of the base portion to be used when soldering the connector terminal onto a rear surface of the board; and inclined surfaces for position control formed at both ends of the base portion to be used when soldering the connector terminal; a pair of positioning holes at which the aligning pins are loosely fitted are formed at each of four corners of the board; and positions of the connector terminals are controlled when soldering the connector terminals as the inclined surfaces for position control at adjacent connector terminals come into contact with each other while the positioning pins are loosely fitted at the positioning holes.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have terminals formed on four peripheral edges of the substrate as taught by Yasuho et al. employed in the device of Khosrowpour in order to provide a high density electrical connection between board to board.

(10) Response to Argument

For claims 1 and 5, Appellant argues:

a) Khosrowpour does not disclose "a daughterboard which is a multilayer module board."

Examiner disagrees because as in column 4, lines 17-19, Khosrowpour discloses a daughterboard (120), which is a multilayer board. Even though Appellant states that Khosrowpour does not disclose a daughterboard, Khosrowpour clearly discloses said daughterboard at column 4 lines 17-19.

b) Khosrowpour does not disclose the multilayer board including at least a CPU and memory.

Examiner disagrees because as shown in figure 1 that the daughterboard comprising at least a CPU (a bigger chip, not label) and a memory (the three chip reside near to the square chip (CPU)). However, the daughterboard typically, if not always includes a CPU and memory, and therefore, the recitation of the daughterboard being anticipated to include the CPU and memory as claimed. For example, Santore et al. (Patent 5,615,211) discloses an interface card/board (30, column 3, lines 15-17) including a processor (116, 124) and memory (buffers 114, 118).

c) Khosrowpour does not disclose that "the daughterboard 120 is **ONE** of a low end module board, a high speed module board, **or** an advance function module board."

Examiner disagrees. The three broad types of daughter boards recited in claims 1 and 5 cover a very broad spectrum of known daughter boards. Furthermore, as shown in column 4, lines 9-21 of Khosrowpour, there are many types of the daughterboard (120, 130) are accepted by the motherboard (110), and the low end module board, the

high speed module board, **or** the advance function module board is very broad that covers every types of the board. Therefore, the daughterboard (120, 130) as shown in figure 1 that being capable as the same of the low end module board, the high speed module board, **or** the advance function module board as broadly recited by Appellant in claims 1 and 5.

For claim 3, the Appellant argues:

d) The combination of Khosrowpour and Aruga is improper because Khosrowpour does not disclose all of the limitations of claim 1.

Examiner disagrees. With respect to the explanation of the arguments (a) to (c) as above, Khosrowpour discloses all of the limitations of claim 1. Therefore, the combination of Khosrowpour and Aruga is proper.

For claims 6-10, the Appellant argues:

e) The combination of Khosrowpour and Yasuho is improper because Khosrowpour does not disclose all of the limitations of claim 1.

Examiner disagrees. With respect to the explanation of the arguments (a) to (c) as above, Khosrowpour discloses all of the limitations of claim 1. Therefore, the combination of Khosrowpour and Yasuho is proper.

f) The combination of Khosrowpour and Yasuho is improper because Yasuho does not teach "the multilayer module board comprising: four connector terminals each is carried with the base portion attached to a transfer adapter and connected through soldering onto a rear surface of the board while attached to the transfer adapter."

Examiner disagrees because as in figures 21-22 of Yasuho, the insulating substrate (7) having four connector terminals (4) provided as separate members on four edge sides of the substrate and each soldered onto one of four peripheral edges, and the substrate's connectors (4) attached to a transfer adapter (34, column 8, line 18) and connected through the solder onto the circuit board (22). Therefore, the combination of Khosrowpour and Yasuho is proper.

g) The combination of Khosrowpour and Yasuho is improper because Yasuho does not teach "the multilayer module board comprising: four connector terminals and pair of positioning holes."

Examiner disagrees. As shown in figure 22 of Yasuho, the four connectors (4, the connector having terminal portion 27) of the substrate (7) integrated with the radiation member (34) having a pair of position holes (36).

Therefore, the combination of Khosrowpour and Yasuho is proper.

(11) Evidence Appendix

The statement of the evidence appendix contained in the brief is correct.

(12) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Tuan T Dinh/

Primary Examiner, Art Unit 2841.

Conferees:

Dean Reichard./D. A. R./

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